# NATIONAL CENTERS FOR COASTAL OCEAN SCIENCE

# Hollings Marine Laboratory

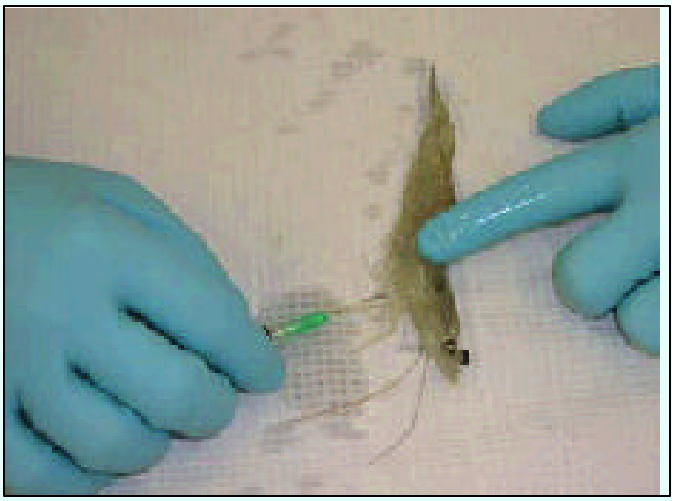
NOAA
Ocean Service

*Hollings Marine Laboratory (HML), named after Senator E. Fritz Hollings, Chairman of the Senate Commerce Committee, is a recent addition to NCCOS. The laboratory is a multi institutional, multi-disciplinary institution located in Charleston, South Carolina. Partner institutions include NCCOS, South Carolina Department of Natural Resources, University of Charleston, National Institute of Standards and Technology (NIST), and the Medical University of South Carolina. HMLs' mission is to provide science and biotechnology applications to sustain, protect, and restore coastal ecosystems, emphasizing linkages between environmental and human health . HML consists of approximately 32,830 square feet of state-of-the-art laboratory/bench space for analytical/environmental chemistry, aquaculture, scanning and transmission electron microscopes, cryogenic sample preparation and long term storage, and two BSL3 laboratories. HML, although owned and operated by NCCOS, is governed by an Executive Board, a Science Board, and several operational committees, under the leadership of a NOAA laboratory director. It is anticipated that the staff will consist of about 20 scientists from each of the five partners, visiting scientists, and about 20-30 graduate students, all conducting collaborative research in the HML thematic areas. Major research themes include:*

## Environmental/Analytical Chemistry

HML provides the facilities and instrumentation required to determine the presence, amount, and structural characteristics of elements, man-made contaminants, and organic compounds, such as biotoxins, in the water, sediment, and tissues of the marine environment. Space is also available to develop quality assurance standards for chemical measurements in the marine environment in support of international, national, and regional research and monitoring programs.

## Environmental Biology/ Response Evaluation



HML provides a range of facilities, including challenge laboratories, for evaluating the acute and chronic responses of natural and anthropogenic stresses on marine organisms. The two BSL3 laboratories are a unique feature that exist at only a few

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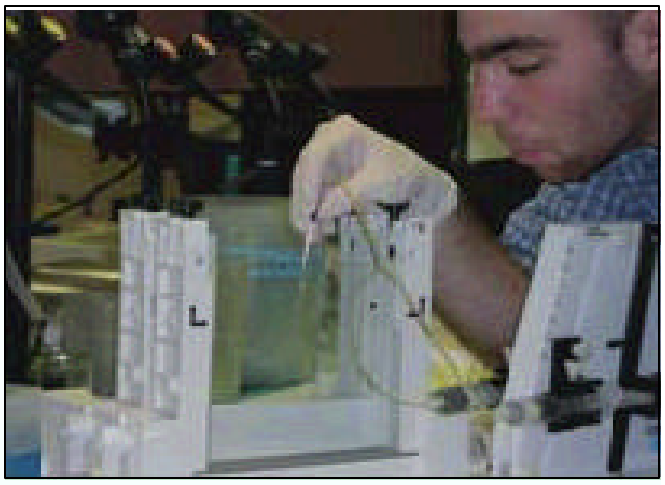
facilities in the southeast and provide HML the capability for conducing challenge experiments on extremely toxic materials (e.g., biotoxins, pesticides, and viruses) while maintaining a safe work environment for investigators.

## Cryogenic Storage

HML includes a cryogenic environmental specimen banking facility in a clean-room environment for the long-term archival of biological tissues and other material collected in the marine environment. This facility is operated by NIST.

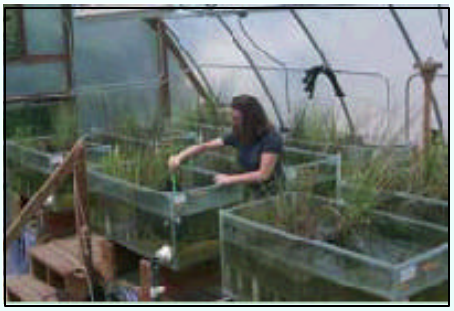
## Molecular Biology and Physiology

Equipment and facilities at HML provide for the application of biomedical technology and paradigms to evaluate the responses of marine organisms to stress and to assess their overall health. Molecular biology research themes will include biomarker research, marine genomics, proteomics, micorbiology, developmental biology, reproductive biology, disease research, pathology, and whole organism physiology.



## Aquatic Production

HML aquatic production facilities are designed to produce and hold organisms from plankton to fish (juvenile to adult) in the range of sizes and life stages required by the thematic research programs described above. These facilities include: raw and settled seawater systems, a wet laboratory/culture facility with holding tanks (2-12 feet in diameter), maturation facilities that control water temperature and photoperiod for bringing organisms into reproductive condition, and an exterior tank pad for holding and culturing organisms to be used by research projects.



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